KS4 Maths & Finance Teaching and Learning Framework

Intent

Our students will enjoy developing their numeracy skills and take satisfaction in problem solving. We place emphasis on the mathematical process rather than the final answer, placing value on learning from mistakes and building on prior learning. Pupils will leave us understanding that maths is in the world around us and does not solely take place in the classroom.

Our maths curriculum will ensure that pupils are able to apply their mathematical skills to the world around them , ensuring they are as fully prepared for adulthood as possible.

Rationale

Mathematics plays a crucial role in our everyday lives, providing us with the tools to understand and engage with the world around us. It nurtures the natural ability of students to think logically, solve puzzles, and apply these skills to real-life problems. Our goal is to foster creative thinking and establish connections between mathematical concepts by exploring patterns in numbers, shapes, measurements, and statistics. Through the principles of fluency, reasoning, and problem-solving, we aim for our students to not only explain their reasoning but also justify their answers. This development will equip them with the necessary skills, knowledge, and efficient calculation methods to succeed economically and solve daily challenges. Mastering mathematics will be instrumental in preparing our students to confidently and resiliently navigate their transition to college or the workforce.

To ensure comprehensive learning, we have designed a spiral curriculum that allows our students to revisit topics and areas multiple times throughout their academic journey. Running through the framework there will be a focus on students ability to solve problems mentally whenever possible. With each revisit, the complexity of the subject matter increases, while maintaining connections with prior learning and placing it in context. This approach offers numerous benefits as it reinforces and strengthens

information and learning each time a topic is revisited. It enables a logical progression from basic concepts to more advanced ones. Additionally, students are encouraged to apply their foundational knowledge to achieve later learning objectives.

Cycle One					
Autumn 1			**Autumn 2**		
Place Value & Four Operations			**Number 1**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Understanding Addition - Recognize and count objects and actions to understand addition as combining groups. **Understanding Subtraction** - Identify situations where subtraction is needed, such as taking away objects.	**Understanding Place Value (1- at least 100)** - Identify the value of digits in numbers up to and beyond 100. - Recognize the importance of the position of digits in a number. **Column Addition and Subtraction** - Add and subtract numbers using the vertical	**Understanding Place Value (1-1000)** - Identify the value of digits in numbers beyond 1000. **Column Addition and Subtraction** - Add and subtract numbers using the vertical column method. - Carry over and borrow when needed in column addition and subtraction.	**Identifying Simple Number Patterns:** - Recognize basic number patterns in sequences, using colours, numicon or pictures - Extend and predict simple patterns in sequences, **Writing Whole Numbers as Words:** - Develop the	**Identifying Number Patterns:** - Recognize and describe number patterns in sequences, including arithmetic and geometric patterns. - Extend and predict patterns in numerical sequences. **Writing Numbers as Words:** - Develop the skill to express numbers in word form,	**Exploring Square Numbers, Square Roots, and Powers:** - Learn the concept of square numbers (e.g., 4, 9, 16) and square roots (e.g., √9 = 3). - Understand the concept of powers and how they relate to exponentiation (e.g., 2^3 = 8). **Factors and Highest Common Factors (H.C.F):** - Understand factors as numbers that divide

Introduction to Multiplication - Explore multiplication as repeated addition, e.g., 2 groups of 3 is the same as 3 + 3. - Begin to solve simple multiplication problems, like 2 x 1, by counting or grouping objects. **Introduction to Division** - Understand division as sharing or grouping objects into equal parts. - Divide a small set of objects into equal groups to introduce basic division concepts. **Recognizing**	column method.(no rearranging). Add and subtract numbers using the column method with rearranging. **Ordering Numbers (Up to at least 1000)** - Arrange numbers in ascending and descending order up to at least 1000. - Compare and place numbers correctly on a number line. **Multiplication Timetables** - recall multiplication facts for times tables up to 10 x table - Solve multiplication problems involving a 2 digit and a single-digit	**Ordering Decimals and Negative Numbers** - Arrange decimals in ascending and descending order. - Understand the concept of negative numbers and place them on a number line. **Multiplication Timetables** - recall multiplication tables up to 12 x - Solve multiplication problems involving 2 and a single-digit number. **Long Multiplication** - Perform long multiplication using the grid method. - Multiply multi-digit numbers step by step, aligning	ability to express whole numbers in spoken word form. **Basic Rules for Arithmetic Operations:** - Learn and apply basic rules for addition, subtraction, multiplication, and division with small numbers or objects **Halving and Doubling (Numbers up to 20):** - Practice halving and doubling small amounts efficiently. .	including whole numbers and decimals. - Practise converting numerical expressions to written words accurately. **Understanding Odd and Even Numbers:** - Differentiate between odd and even numbers. - Identify the properties and characteristics of both odd and even numbers. - Identify basic properties of odd and even numbers, like "odd numbers end in 1, 3, 5, 7, or 9." **Negative Numbers:** - Recap the concept of negative numbers and their placement on the number line.	evenly into another number. - Calculate the highest common factor (H.C.F) of two or more numbers. **Multiples and Lowest Common Multiples (L.C.M):** - Understand multiples as numbers that are products of another number. - Calculate the lowest common multiple (L.C.M) of two or more numbers. **Identifying Prime Numbers:** - Recognize prime numbers within a specified range and understand their properties **Using Rounding for Estimations:** --Pupils will be able to identify situations where rounding is useful, round numbers to the nearest

Symbols - Learn and recognize the addition (+), subtraction (-), multiplication (x), and division (÷) symbols. - Associate these symbols with their respective operations. **Using Basic Maths Facts** - Recall basic addition and subtraction facts for numbers 0-5. - Begin to use these facts to solve simple maths problems	number. **Long Multiplication** - Perform long multiplication using the grid method **Division Using Written Methods** - Pupils will practise a variety of methods for performing division (eg repeated subtraction) - Pupils will Understand what a remainder is in division. **Recognizing Coins and Notes:** - Identify and distinguish various coins and notes, including their	digits correctly. **Division Using Written Methods** - Learn various methods for performing division. - Divide two numbers using the long division method. **Remainders in Division** - - Solve division problems and express the remainder appropriately. **Advanced Currency Recognition and Handling:** - Demonstrate a comprehensive understanding of various coins and notes, including their denominations and distinguishing features.		- Understand operations involving negative numbers (e.g., addition, subtraction). **Halving and Doubling:** - Practice halving and doubling numbers efficiently. - Apply halving and doubling techniques for mental calculations. **Understanding BIDMAS (Order of Operations):** - Familiarise with the BIDMAS acronym (Brackets, Indices, Division and Multiplication, Addition and Subtraction). - Apply the order of operations to solve complex mathematical expressions.	ten, hundred, or other specified place value, and use rounded numbers to estimate the results of mathematical calculations and real-world problems with reasonable accuracy. -Students will develop the ability to assess the appropriateness of their rounded estimations in different contexts and explain their reasoning for choosing specific rounding strategies.

	denominations and unique features. **Making Amounts with Coins and Notes:** - Construct specific monetary amounts using a combination of coins and notes, considering different denominations. - Demonstrate the ability to form amounts accurately and efficiently. - Practise making purchases and paying for items at the local supermarket using the appropriate currency. **Money as Decimals:** - Understand the connection	- Apply this knowledge during a visit to a local supermarket, where you will identify and handle different currency denominations for real-life transactions. **Money Management and Practical Budgeting:** - Develop practical money management skills by creating and managing a realistic shopping list based on specific needs, preferences, and budget constraints. - Calculate the estimated total cost of items on the shopping list, considering quantities, prices, and potential discounts to stay within budget.		**Factors:** - Recognize factors as numbers that can divide evenly into another number. - Identify factors of simple numbers up to 25 without complex calculations. **Multiples:** - Understand multiples as numbers that can be obtained by counting forward from another number. - Find the first few multiples of numbers up to 10 through counting. **Prime Numbers (Up to 20):** - Define prime numbers as numbers that have exactly two factors: 1 and themselves. - Recognize prime numbers within a	

	between money and decimals by recognizing that cents represent parts of a whole dollar. - Begin to use decimal notation when dealing with monetary amounts, such as understanding that £1.50 can be represented as 1.50 pounds. **Calculating Totals with Money (Including Real-Life Scenarios):** - Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios. - Apply addition skills to find the	**Transaction Calculations and Efficient Payment Handling:** - Apply mathematical calculations to determine the total cost of items selected during the supermarket visit, considering any discounts or special offers. - Practise efficient payment handling by calculating change accurately and confirming receipts during real-life transactions at the supermarket. **Financial Decision-Making:** - Engage in informed financial decision-making by evaluating product options, comparing prices, and making		specified range from 1 to 20.	

	sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit. **Calculating Change:** - Determine the change to be received after making a purchase by subtracting the total cost from the amount paid. - Accurately count and provide change using a combination of coins and notes. - Practice giving and receiving change during the supermarket visit when making purchases.	choices based on quality, value, and personal preferences during the supermarket visit. - Reflect on and analyse the financial decisions made during the visit, considering how easy or difficult it was to remain within budget.			

	Budgeting and Decision-Making: - Learn to make informed decisions when shopping by comparing prices, evaluating quality, and considering personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget constraints. - Reflect on budgeting and decision-making experiences during and after the supermarket visit. **Practical Application of Money Skills:** - Apply money skills acquired during the supermarket visit to real-life				

	situations, such as shopping for groceries, personal items, or making everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.				
Spring 1			**Spring 2**		
Geometry & Measure			**Number 2**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Using a Ruler to Measure Lines: -Introduce learners to the concept of measurement using a ruler. Help them understand how to place a ruler alongside an object or line and	**Identifying 2D Shapes:** - Differentiate between 2d shapes based on their defining characteristics, such as the number of sides and angles.	**Calculate the Area of Triangles:** -By the end of this lesson, students should be able to accurately calculate the area of triangles using the formula A = 0.5 * base * height, demonstrating a	**Understanding What Fractions Represent:** - Recognize that fractions represent parts of a whole or a group. - Understand that fractions are used to show how something is	**Simplifying Fractions:** - Simplify fractions with different numerators and denominators to their lowest terms. **Comparing and**	**Solving Word Problems (Multiplying Proper Fractions):** - Solve word problems that involve the multiplication of proper fractions and express answers in simplified form. **Adding Improper**

count the units to find its length. Focus on measuring lines of different sizes in a hands-on and practical manner. **Identifying Straight Lines:** -Teach learners to recognize and distinguish straight lines from other shapes and objects. Use everyday examples, such as the edges of a book or the sides of a door, to help them identify and understand the characteristics of straight lines. **Recognizing Basic Shapes:** -Introduce simple geometric shapes like circles,	**Describing Properties of 2D Shapes:** - Describe the key properties of 2D shapes, including sides, angles, and symmetry. - Identify shapes with specific properties, like right angles or equal sides. **Classifying 2D Shapes:** - Categorize 2D shapes into broader groups, such as quadrilaterals, triangles, and circles. - Identify the subcategories within these groups, like isosceles triangles or rhombuses.	clear understanding of how to measure and apply the base and height of a triangle. **Decompose and Calculate Compound Shape Areas:** -Develop the ability to decompose complex shapes into simpler geometric components, such as triangles and rectangles. Students will then calculate the total area of compound shapes by summing the areas of these individual components, demonstrating proficiency in breaking down and solving more	divided into smaller, equal parts. **Identifying Basic Fractions:** - Recognize and name simple fractions, such as halves (1/2) and quarters (1/4). - Learn to identify these fractions in everyday objects, like dividing a pizza into halves or sharing cookies into quarters. **Comparing Fractions:** - Understand the concept of "more" or "less" when comparing fractions. - Compare basic fractions (e.g., 1/2 and 1/4) to identify which	**Ordering Fractions (Different Denominators):** - Compare and order fractions when the denominators are dissimilar, using visual models and reasoning. **Comparing and Ordering Fractions (Common Denominators/Numerators):** - Compare and order fractions by finding common denominators or common numerators, promoting understanding of equivalence. **Adding & Subtracting Fractions with common denominators:** -Perform addition	**Fractions and Mixed Numbers (Unlike Denominators):** - Add improper fractions and mixed numbers with different denominators, simplifying answers where possible. **Subtracting Mixed Numbers with Regrouping:** - Apply regrouping techniques to subtract mixed numbers accurately. **Understanding Percentage Increase and Decrease with Multipliers:** -Students should be able to comprehend the concepts of percentage increase and decrease and how to use multipliers to calculate these changes. They should be able to apply this

squares, triangles, and rectangles. Help learners identify these shapes in their surroundings and understand their basic properties, such as the number of sides and corners. **Calculating Area in Basic Shapes:** -Begin to introduce the concept of area by focusing on basic shapes like squares and rectangles.	**Perimeter and Area:** - Calculate the perimeter of more complex 2D shapes eg compound shapes - calculate the area of basic shapes like rectangles and squares by counting unit squares or using formulas. **Constructing and Drawing 2D Shapes:** - Use rulers, protractors, and other tools to accurately draw 2D shapes with specific dimensions. - Understand how to construct shapes based on given criteria, like drawing a	complex area problems. **Apply Area Concepts to Real-World Scenarios: -**Apply the knowledge of area calculation to real-world scenarios and practical problems involving triangles and compound shapes, such as calculating the area of irregular plots of land or designing floor plans. Students should be able to translate mathematical concepts into meaningful applications.	represents a larger or smaller part. **Practical Use of Fractions:** - Apply the concept of fractions in everyday situations, such as sharing toys or snacks with friends. - Use simple fractions to describe how objects or groups are divided or shared in a practical context.	and subtraction operations on fractions with common denominators simplifying answers where possible. **Adding and Subtracting Fractions (Different Denominators):** - Perform addition and subtraction operations on fractions with distinct denominators, ensuring the result is less than one. **Multiplying Proper Fractions (Simplified Answers):** - Multiply proper fractions together, ensuring the answer is simplified to its lowest terms.	knowledge to solve problems involving price changes, discounts, markups, salary adjustments, and other scenarios where percentages are used to represent changes in values. - Additionally, students should be able to explain how the multiplier method simplifies the calculation of these percentage changes and demonstrate proficiency in its application.

	parallelogram with specific angles. **Analysing Real-World Applications of 2D Shapes:** - Apply knowledge of 2D shapes to solve real-world problems, such as calculating the area of a room or determining the shape of a garden. - Recognize and describe the presence of 2D shapes in everyday objects and architecture. **Identifying Types of Angles:** -Students should be able to distinguish and correctly identify different types of	**Understanding Pythagoras' Theorem:** -By the end of this lesson, students should have a clear and comprehensive understanding of Pythagoras' Theorem, recognizing it as a fundamental principle that applies to right-angled triangles. They should be able to state the theorem and its significance in geometry. **Applying Pythagoras' Theorem:** -Develop the ability to apply Pythagoras' Theorem to calculate the length of an		**Dividing one Fraction by another:** - Perform division operations to divide proper fractions, expressing answers as fractions. **Solving Word Problems (Dividing Proper Fractions by Whole Numbers):** - Solve word problems that require dividing proper fractions by whole numbers and express answers in context. **Calculating Decimal Fraction Equivalents:** - Convert fractions to their decimal equivalents with an understanding of place value and decimal notation. **Calculating**	

	angles, including acute, obtuse, right, and straight angles, both in written descriptions and geometric figures. **Measuring Angles: -**Develop proficiency in using a protractor to accurately measure angles in degrees. **Constructing Angles: -**Learn to use a ruler and protractor to draw angles with specified measurements. Students should be able to construct angles of various sizes and types, including acute, obtuse, and right angles, following	unknown side (either the hypotenuse or another side) in a right-angled triangle. Students should be able to identify when the theorem is applicable and solve related problems accurately. **Using Pythagoras' Theorem in Real-World Scenarios:** -Apply Pythagoras' Theorem to solve real-world problems and practical situations, such as determining the distance between two points on a map, calculating the dimensions of a right-angled object, or assessing the		**Percentages of an Amount:** -Develop proficiency in calculating percentages of a given amount. Students should be able to use various methods, such as finding a percentage of a number through multiplication or by converting percentages into fractions and decimals. They should also be able to solve practical problems that involve finding a percentage of an amount. Introduce the idea of 10% as a building block. **Calculating One Amount as a Percentage of Another:** -Enable students to calculate one	

	given instructions or angles from a diagram. **Applying Angle Concepts:** -Apply knowledge of angle types, angle measurement, and angle construction to solve geometric problems and real-world scenarios. Students should be able to calculate missing angles in triangles, quadrilaterals, and other polygons, as well as use angles to solve problems involving direction and orientation.	safety of structures involving right angles. Students should demonstrate the ability to translate mathematical concepts into real-world application **Angle Properties in Triangles and Quadrilaterals:** -Students should be able to identify and apply angle properties within triangles and quadrilaterals, including recognizing that the sum of interior angles in a triangle is always 180 degrees, and in a quadrilateral, it is always 360 degrees.		amount as a percentage of another, emphasising the concept of finding a percentage increase or decrease. They should be able to use this knowledge to solve problems related to discounts and other real-world applications involving percentages.	

		They should be able to calculate missing angles in these polygons using this knowledge. **Understanding Exterior Angles around a Point:** **-**Develop an understanding of exterior angles formed around a point. Students should be able to recognize that the sum of the exterior angles around a point is always 360 degrees and apply this concept to solve problems involving angles formed from a common point and 2 angles on a line (180 degrees).			

		Understanding Angle Relationships in Parallel Lines: -Introduce mid-level learners to the concept of angle relationships within parallel lines. Students should be able to identify and apply angle rules, such as corresponding angles, alternate interior angles, and alternate exterior angles, to solve problems involving intersecting lines and parallel lines. They should also be able to distinguish between these angle relationships and apply them			

		effectively in various geometric scenarios.			
Summer 1			**Summer 2**		
Algebra			**Statistics & Probability**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Recognizing Numbers and Counting - Develop the ability to recognize and identify numbers from 1 to 10. - Practise counting objects and understanding numerical order. **Matching Objects to Numbers** - Connect objects to their	**Finding Function Outputs and Inverse Operations:** - Find the output of a single function machine when given the input. - Apply inverse operations to determine the input from the output of a function machine. **Utilising Diagrams, Letters, and Number**	**Finding Function Machines from Two-Step Expressions:** - Identify function machines within two-step algebraic expressions. - Relate expressions with two-step operations to the concept of function machines. **Substitution with Two-Step Expressions:** - Practise	**Collecting Data:** - Learn to gather information by counting or asking questions in a structured way. - Understand that data is a collection of facts or details about something. **Creating Simple Pictograms:** - Use basic symbols or	**Interpreting Pictograms:** - Read and interpret information presented in pictograms, understanding that each symbol represents a certain quantity. - Make comparisons between different quantities represented in pictograms. **Creating**	**Analysing Data Distribution:** - Use pie charts to analyse the distribution of data among different categories or components. - Identify which categories are more or less significant based on their respective sector sizes. **Constructing and Labelling Pie Charts:** - Construct pie charts to represent data, ensuring that the sum of the angles equals 360 degrees (or

corresponding numbers, such as matching three apples with the number "3." - Begin to understand that numbers represent quantities. **Understanding Basic Operations** - Explore basic addition and subtraction as combining or taking away objects. - Use physical objects or pictures to grasp the concept of adding and subtracting. **Introducing Simple Patterns** - Recognize and create simple patterns, like alternating colours or shapes	**Operations with Function Machines:** - Represent function machines using diagrams and algebraic expressions. - Use letters (unknowns) in combination with number operations to describe and solve function machine problems. **Identifying Function Machines from Expressions:** - Recognize function machines when presented in algebraic expressions. - Understand the relationship between expressions and function machines.	substituting values into two-step algebraic expressions. - Calculate the outcomes of expressions with multiple steps when values are substituted. **Generating Sequences from Algebraic Rules:** - Learn how to generate sequences of numbers using given algebraic rules. - Apply these rules to create and extend numerical sequences. **Using Graphs to Represent Functions:** - Create graphical representations of one-step functions using coordinates. - Extend this knowledge to	pictures to represent collected data. - Create simple pictograms to display data related to familiar objects or preferences. **Interpreting Pictograms:** - Recognize and understand that each symbol or picture in a pictogram represents a piece of information or data. - Read and interpret simple pictograms to answer questions about the collected data.	**Pictograms:** - Create pictograms to represent data, choosing appropriate symbols and scales. - Label pictograms clearly and ensure they effectively convey information. **Analysing Tally Charts:** - Interpret data presented in tally charts, recognizing how tally marks represent individual units. - Use tally charts to count and compare the frequency of different items or categories. **Constructing Tally Charts:** -Construct tally charts to collect and	100%). - Label pie charts with category names and percentages for each sector, enhancing data comprehension. **Interpreting Histograms:** - Define histograms as graphical representations of data that show the frequency or count of data points within specific intervals or bins. - Learn to read histograms by analysing the height of bars within each interval. **Analysing Data Distribution in Histograms:** - Use histograms to analyse the distribution of data values, including identifying trends, modes, and data spread. - Understand how the shape of a histogram can provide insights into the data's characteristics,

in a sequence. - Begin to understand the idea of repetition and predictability. **Exploring Shapes and Sizes** - Identify and differentiate between basic shapes, such as circles, squares, and triangles. - Compare and describe the size of objects using terms like "big," "small," "short," and "long." **Creating and Extending Patterns** - Build on the concept of patterns by creating and extending more complex patterns, such as ABAB or	**Substitution into Expressions:** - Learn how to substitute specific values into algebraic expressions. - Calculate the result of expressions when values are replaced with unknowns or numbers. **Determining Inputs and Outputs for Two Function Machines:** - Find both input and output values for two different function machines. - Analyse how multiple function machines can be used in a sequence. **Using Diagrams,**	represent two-step functions graphically	**Comparing Data Sets with Pictograms:** - Use pictograms to compare data from different categories or groups. - Make basic comparisons, such as identifying which category has more or fewer items based on the pictogram.	organise data efficiently. - Ensure tally charts are neatly organised and labelled, making them easy to read and understand. **Understanding Bar Charts (Bar Graphs):** - Interpret information presented in bar charts with intervals of more than one,., recognizing that the height or length of bars represents data values. - Compare data across different categories or time periods using bar charts. **Creating and Customizing Bar Charts:** - Create bar charts	such as symmetry or skewness.

ABBABB. - Recognize patterns in everyday objects and activities.	**Letters, and Two Function Machines:** - Represent and solve problems involving two function machines using diagrams and algebraic expressions. - Apply letters (unknowns) and number operations to describe and solve two-step function machine problems.			to display data, selecting appropriate scales and labels for both axes. - Customise bar charts by choosing different colours and styles to enhance visual clarity and impact. **Analysing Pie Charts (Circle Graphs):** - Interpret data presented in pie charts, understanding that each sector represents a portion of the whole. - Analyse the distribution of data among categories or components within a pie chart. -Understand that each sector represents a portion of the whole and is	

				proportional to the data it represents.	

Cycle Two					
Autumn 1			**Autumn 2**		
Number 1			**Geometry & Measure**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Understanding Addition:	**Understanding Place Value:** - Extend	**Column Addition and Subtraction** - Add and subtract	.**Recognizing Clocks** - Identify and	**Understanding Analogue Clocks** - Recognize the	**Converting Analogue to Digital Time (24-Hour Format):**

- Build on the concept of addition by applying it to more complex scenarios. **Understanding Subtraction:** - Extend the understanding of subtraction to more diverse situations where it is necessary to subtract or remove items from a given set. **Exploring Multiplication Concepts:** - Deepen the understanding of multiplication by exploring it as a	understanding of place value to numbers up to 1,000.and beyond. - Recognize the significance of each digit's position in larger numbers, including thousands and hundreds. **Column Addition and Subtraction:** - Add and subtract two-digit and three digit numbers using column addition and subtraction with and without regrouping. - Solve problems that involve borrowing and carrying when appropriate. **Ordering Numbers (Up to 1000):**	numbers using the vertical column method, including carrying over and borrowing when needed in column addition and subtraction. **Ordering Decimals and Negative Numbers** - Arrange decimals in ascending and descending order. - Understand the concept of negative numbers and place them on a number line. **Multiplication Timetables** - recall multiplication tables up to 12 x - Solve multiplication problems involving 2 and a single-digit number.	recognize the appearance of both analogue and digital clocks. - Distinguish between the hour and minute hands on an analogue clock. **Understanding Day and Night** - Differentiate between daytime and nighttime. - Recognize that the sun is typically up during the day and down during the night. **Sequencing Daily Activities** - Arrange daily activities in chronological order, emphasising morning, afternoon, and evening routines. - Begin to	components of an analogue clock, including the hour hand, minute hand, and clock face. - Identify and read the time displayed on an analogue clock to the nearest hour and half-hour. **Calculating Duration of Events** - Learn to measure the duration of simple events using minutes and hours. - Calculate the time elapsed between the start and end of events using analogue clocks. **Units of Time** - Understand the concept of units of time, such as seconds, minutes,	- Understand and demonstrate the conversion of time from analogue clocks to the 24-hour digital format. - Practise converting time accurately, including recognizing AM and PM distinctions. **Using Timetables** - Learn to interpret and use timetables, such as bus schedules or train timetables. - Apply timetables to plan and schedule activities and transportation. **Worded Time Problems** - Solve complex word problems involving time, incorporating various time units (seconds, minutes, hours, days). - Analyse and extract relevant information from worded time problems. **Adding Time of Events**

method for scaling up or repeated addition, e.g., 3 groups of 4 is equivalent to 4 + 4 + 4. - Apply multiplication to solve more complex problems involving larger numbers, arrays, and real-world situations. **Division Concepts:** - Expand the comprehension of division by delving into the concepts of sharing and grouping objects into equal parts for more extensive sets.	- Extend the ability to arrange numbers in ascending and descending order to include larger numbers up to and beyond 1,000. - Demonstrate proficiency in comparing and accurately placing numbers on an expanded number line, including values beyond 100. **Multiplication Timetables:** - Recall and apply multiplication facts confidently for times tables up to the 12 x table. - Solve multiplication problems involving two-digit numbers multiplied by single-digit numbers,	**Long Multiplication** - Perform long multiplication using the grid method. - Multiply multi-digit numbers step by step, aligning digits correctly. **Division Using Written Methods** - Learn various methods for performing division. - Divide two numbers using the long division method. **Remainders in Division** - Solve division problems and express the remainder appropriately.	comprehend the concept of a daily schedule. **Basic Time-Related Vocabulary** - Learn and use simple time-related vocabulary, such as "morning," "afternoon," "night," "today," and "tomorrow." - Practice using these words in everyday conversations related to time.	hours, days, and weeks. - Learn to differentiate between these units and their relative sizes. **Converting Analogue to Digital Time** - Translate the time shown on an analogue clock into digital format (e.g., 2:30 PM). - Practise converting between analogue and digital time representations. **Interpreting Calendars** - Explore the use of calendars to track dates, months, and years. - Understand how to locate specific dates and events on	**and Calculating Duration** - Calculate the total time elapsed when multiple events occur at different times during the day. - Apply addition and subtraction skills to find the duration of events spanning multiple time periods.

Recognizing Mathematical Symbols: - Continue to learn and recognize mathematical symbols such as addition (+), subtraction (-), multiplication (×), and division (÷). - Gain a deeper understanding of how these symbols represent mathematical operations and apply them to more intricate mathematical expressions. **Applying Basic Maths Facts:** - Build upon the recall of basic addition and	demonstrating improved multiplication fluency. **Long Multiplication:** - Advance long multiplication skills to include two-digit by two-digit multiplication using the grid method. - Apply the grid method for multiplication efficiently to solve more complex problems involving larger numbers. **Division Using Written Methods:** - Build on knowledge of division methods by learning and practising the short division			a calendar. **Worded Time Problems** - Solve word problems that involve telling time and calculating time intervals. - Use reading and comprehension skills to extract relevant information from the problems. **Adding Time of Events and Calculating Duration** - Add the durations of multiple events using analogue clocks and units of time. - Calculate the total time elapsed when multiple events occur sequentially.	

subtraction facts for numbers 0-5 to include facts for numbers up to 10 or higher. - Apply these facts confidently and efficiently to solve a wide range of mathematical problems, laying the foundation for more advanced mathematical operations.	method. - Develop proficiency in solving division problems involving larger dividends and divisors, including remainders, using written methods such as short division.				
Spring 1			**Spring 2**		
Number 2			**Algebra**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Collecting Data from Simple Observations: - Develop the ability to collect	**Identifying Multiples and Factors:** - Identify multiples and factors of a given	**Exploring Square Numbers, Square Roots, and Powers:** - Learn the concept of square numbers (e.g., 4, 9, 16) and	**Solving Simple Equations with Concrete Examples:**	**Understanding unknowns/Unknowns** - Define and identify what an	**Understanding unknowns and Constants** - Define and distinguish between unknowns (representing unknowns)

basic data by counting and observing everyday objects or occurrences. - Practice recording the data in a simple, organised manner, such as tally marks or simple drawings. **Creating Basic Pictograms**: - Learn to represent collected data using simple pictograms, where each picture or symbol represents one unit of data. - Explore using easily recognizable symbols, like	number. - Find all factor pairs of a number, demonstrating a clear understanding of factors and multiples. **Problem Solving with Multiplication and Division:** - Solve problems that involve multiplication and division. - Apply knowledge of factors and multiples, as well as squares and cubes, to solve various mathematical problems. **Vocabulary of Prime Numbers and Composite Numbers:**	square roots (e.g., √9 = 3). - Understand the concept of powers and how they relate to exponentiation (e.g., 2^3 = 8). **Factors and Highest Common Factors (H.C.F):** - Understand factors as numbers that divide evenly into another number. - Calculate the highest common factor (H.C.F) of two or more numbers. **Advanced Currency Recognition and Handling:** - Demonstrate a comprehensive understanding of various coins and notes, including their denominations and distinguishing	- Explore basic equations with a single unknown, using everyday objects like apples or toys to represent numbers. - Begin to solve these equations by finding the value of the unknown through physical manipulation, such as counting objects. **Using Shapes and Pictures for Algebraic Ideas:** - Understand that algebraic concepts can be connected to shapes and pictures. - Practise using drawings or shapes to illustrate basic equations, making	unknown is in mathematical expressions. - Recognize and use simple unknowns (e.g., x, y) to represent unknown quantities. **Solving One-Step Equations** - Learn to solve one-step equations involving addition or subtraction. - Practise using inverse operations to isolate the unknown in equations like 3 + x = 7. **Solving Simple Equations with Multiplication and Division** - Extend equation-solving skills to include multiplication and division.	and constants (fixed values) in algebraic expressions and equations. - Identify unknowns and constants in given algebraic expressions. **Solving One-Step Equations** - Solve one-step equations involving addition or subtraction with integers and fractions. - Use inverse operations to isolate the unknown, such as solving equations like 3x + 5 = 11. **Solving One-Step Equations with Multiplication and Division** - Extend equation-solving skills to include multiplication and division. - Solve equations like 2y/4 = 6 or 8z - 7 = 17 by applying inverse

smiley faces or stars, to create the pictograms. **Interpreting Pictograms for Number Patterns:** - Understand that pictograms represent data visually and that patterns can emerge from the arrangement of symbols. - Begin to identify and discuss simple number patterns, such as which symbol appears most frequently or least frequently in the pictogram.	- Define and use the vocabulary related to prime numbers, prime factors, and composite numbers. - Distinguish between prime and composite numbers, understanding their properties. **Reinforcing Vocabulary and Prime Number Recognition:** - Continue to use and understand the vocabulary of prime numbers, prime factors, and composite numbers. - Determine whether a number up to 100 is prime or composite and recall prime	features. - Apply this knowledge during a visit to a local supermarket, where you will identify and handle different currency denominations for real-life transactions. **Money Management and Practical Budgeting:** - Develop practical money management skills by creating and managing a realistic shopping list based on specific needs, preferences, and budget constraints. - Calculate the estimated total cost of items on the shopping list, considering quantities, prices, and potential discounts to stay within budget.	the idea of unknowns more tangible. **Discovering Balance in Equations:** - Explore the idea of balance by understanding that equations represent a balance between two sides. - Engage with simple equations like "2 + 3 = 5" and "4 - 2 = 2" to grasp the concept of keeping both sides equal.	- Solve equations like 2x = 10 or 15 ÷ y = 3 by applying inverse operations. **Using Expressions to Represent Real-World Scenarios** - Translate real-world situations into simple algebraic expressions. - Understand how to represent situations like "5 more than a number" as algebraic expressions (x + 5). **Evaluating Expressions** - Learn to substitute values for unknowns and evaluate algebraic expressions. - calculate the value of	operations. **Translating Word Problems into Equations** - Translate word problems and real-world scenarios into algebraic equations. - Understand how to represent situations like "twice a number increased by 4 is 18" as algebraic equations. **Solving Two-Step Equations** - Learn to solve two-step equations that involve both addition/subtraction and multiplication/division. - Apply a step-by-step approach to solve equations like 2x + 3 = 11 or 5y/2 - 1 = 9. **Applying Algebraic Skills to Practical Situations** - Apply algebraic problem-solving skills to practical scenarios,

	numbers up to 19. **Multiplying with Formal Written Methods:** - Multiply numbers with up to 4 digits by a one or two-digit number. - Utilise formal written methods, including long multiplication, particularly when multiplying by two-digit numbers. **Advanced Multiplication with Formal Methods:** - Further practice multiplying numbers up to 4 digits by one or two-digit numbers. - Extend proficiency in using formal written methods,	**Transaction Calculations and Efficient Payment Handling:** - Apply mathematical calculations to determine the total cost of items selected during the supermarket visit, considering any discounts or special offers. - Practise efficient payment handling by calculating change accurately and confirming receipts during real-life transactions at the supermarket. **Financial Decision-Making:** - Engage in informed financial decision-making by evaluating product options, comparing		expressions like 2x - 3 when x is given. **Identifying Patterns and Relationships** - Recognize patterns and relationships between numbers and unknowns. - Explore how changing the value of a unknown affects the outcome in algebraic expressions and equations **Identify Number Patterns:** - Recognize and describe linear number patterns in sequences, highlighting the constant difference between consecutive terms. **Extend Sequences:**	including calculating dimensions, rates, and prices. - Solve problems that require setting up and solving two-step equations to find unknown quantities. **Solve Problems Involving Sequences:** -Apply understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions. **Determine Term-to-Term Rules:** Learn to identify and establish the term-to-term rule for linear sequences, understanding how each term relates to the

	particularly focusing on long multiplication for two-digit numbers. **Mental Multiplication and Division:** - Develop mental maths skills to multiply and divide numbers. - Draw upon known facts and multiplication tables to perform mental calculations efficiently. **Recognizing Coins and Notes:** - Identify and distinguish various coins and notes, including their denominations and unique features. - Recognize the monetary value associated with	prices, and making choices based on quality, value, and personal preferences during the supermarket visit. - Reflect on and analyse the financial decisions made during the visit, considering how easy or difficult it was to remain within budget.		-Confidently use the terminology of position and term when describing linear sequences. -Extend existing number sequences both forwards and backwards by applying the identified pattern to predict and generate subsequent terms accurately. **Generalize and Express Pattern:** -Develop the ability to generalise linear number patterns and express rules in words based on multiplying followed by either addition or subtractions. (term to term rule) **Solve Problems**	previous term through addition or subtraction. **Apply Position-to-Term Rules (nth term):** Develop the ability to apply position-to-term rules to determine the value of a term at a specific position within a linear sequence without having to generate all previous terms.(nth term)

	each coin and note. - Apply this knowledge during a visit to a local supermarket, identifying the currency used in transactions. **Making Amounts with Coins and Notes:** - Construct specific monetary amounts using a combination of coins and notes, considering different denominations. - Demonstrate the ability to form amounts accurately and efficiently. - Practise making purchases and paying for items at the local supermarket using			**Involving Sequences:** Apply understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions.	

	the appropriate currency. **Money as a re-cap on Decimals:** - Understand the connection between money and decimals by recognizing that cents represent parts of a whole dollar. - Begin to use decimal notation when dealing with monetary amounts, such as understanding that £1.50 can be represented as 1.50 pounds. **Calculating Totals with Money (Including Real-Life Scenarios):** - Calculate the total cost of items				

	when given a list of prices and quantities, simulating real-life shopping scenarios. - Apply addition skills to find the sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit. **Calculating Change:** - Determine the change to be received after making a purchase by subtracting the total cost from the amount paid. - Accurately count and provide change using a				

	combination of coins and notes. - Practice giving and receiving change during the supermarket visit when making purchases. **Budgeting and Decision-Making:** - Learn to make informed decisions when shopping by comparing prices, evaluating quality, and considering personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget constraints. - Reflect on budgeting and decision-making experiences during and after the supermarket visit.				

	Practical Application of Money Skills: - Apply money skills acquired during the supermarket visit to real-life situations, such as shopping for groceries, personal items, or making everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.				
Summer 1			**Summer 2**		
Number 3			**Ratio & Proportion**		

Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Basic Rules for Arithmetic Operations: - Learn and apply basic rules for addition, subtraction, multiplication, and division with small numbers. - Practise these operations with simple calculations involving numbers up to 20. **Making Sensible Guesses with Rounding:** - Learners will hopefully be able to grasp the idea of rounding numbers as a way to make sensible guesses. -They should	**Understanding BIDMAS (Order of Operations):** - Apply the order of BIDMAS to solve complex mathematical expressions. **Rounding Numbers for Simple Estimations**: -Students will gain confidence in using rounding as a helpful tool for making quick and approximate calculations. **Calculating Decimal Fraction Equivalents:** - Convert fractions to their decimal equivalents with	**Using Rounding for Estimations:** - Students should be able to understand the concept of rounding numbers and apply it as a practical strategy for making estimations. -They should be able to identify situations where rounding is useful, round numbers to the nearest ten, hundred, or other specified place value, and use rounded numbers to estimate the results of mathematical calculations and real-world problems with reasonable accuracy. -Students should also develop the ability to assess the appropriateness of their rounded	**Sharing Equally:** -Support learners to be able to understand and demonstrate the concept of sharing objects or items equally among a group. Aim to divide a collection of objects into equal parts and ensure that each part has the same number of items. **Recognizing Proportion:** -Help students recognize the idea of proportion by using concrete objects and visual aids.	**Understanding Ratios:** - Define what a ratio is and recognize that it represents a comparison of two or more quantities. - Express ratios in the form of "a to b" or "a:b" and understand their significance in real-world contexts. **Simplifying Ratios:** - Learn how to simplify ratios to their simplest form by dividing both parts by their greatest common factor. - Apply this simplification	**<u>Introduction to Ratio and Proportion:</u>** **Understanding Ratio:** - Define what a ratio is and distinguish it as a way to compare two or more quantities. - Represent ratios in the form of "a to b" or "a:b" and identify their components. **Understanding Proportion:** - Define proportion as a special type of equation that states that two ratios are equal. - Recognize that proportions are used to maintain consistent relationships between quantities.

understand that rounding makes numbers easier to work with and helps in making quick and reasonable estimations in simple everyday situations, like guessing the number of candies in a jar or the cost of a small toy. -Students should feel confident using rounding to make sensible and approximate guesses.	an understanding of place value and decimal notation. **Calculating Percentages of an Amount:** -Develop proficiency in calculating percentages of a given amount. - -Students will be able to use various methods, such as finding a percentage of a number through multiplication or by converting percentages into fractions and decimals. - Pupils will be able to solve practical problems that involve finding a percentage of an amount. Introduce the idea of 10% as	estimations in different contexts and explain their reasoning for choosing specific rounding strategies. **Understanding Percentage Increase and Decrease with Multipliers:** -Students should be able to comprehend the concepts of percentage increase and decrease and how to use multipliers to calculate these changes. They should be able to apply this knowledge to solve problems involving price changes, discounts, markups, salary adjustments, and other scenarios where percentages are used to represent changes in values.	- Pupils will be able to compare the sizes of different groups of objects and identify when one group has more or less than the other. **Mixing Simple Recipes:** -Introduce the concept of mixing and proportion through simple recipes, such as making fruit squash, fruit salad or a sandwich. - Learners will be given the opportunity to follow basic instructions to combine different ingredients in the right proportions to	process to ratios to make them easier to work with and understand. **Using Ratios to Compare Quantities:** - Apply ratios to compare different quantities or parts within a whole, such as comparing the number of boys to girls in a class. - Solve problems that involve finding one quantity when the ratio and another quantity are given. **Introduction to the Unitary Method:** - Define the unitary method as a problem-solving	**<u>Comparison Between Ratio and Proportion:</u>** **Identifying Differences:** - Identify the key differences between ratios and proportions, emphasising that a proportion is an equation involving two ratios. - Explain why proportions are used when comparing ratios in specific contexts. **<u>Exploring the Unitary Method:</u>** **Using the Unitary Method to Solve Simple Problems:** - Apply the unitary method to solve basic problems, such as finding

	a building block. **Calculating One Amount as a Percentage of Another:** -Enable students to calculate one amount as a percentage of another, emphasising the concept of finding a percentage increase or decrease. They should be able to use this knowledge to solve problems related to discounts, markups, tax calculations, and other real-world applications involving percentages. **Calculating Totals with Money (Including**	- Additionally, students should be able to explain how the multiplier method simplifies the calculation of these percentage changes and demonstrate proficiency in its application.	create a simple dish or drink. **Using Visual Models: -** Pupils will use visual models, such as drawings or pictures, to represent the sharing or mixing of objects or ingredients. T Pupils will be able to draw or identify simple visual representations that illustrate equal sharing and proportion.	approach that involves finding the value of one unit and then extending it to find the total. - Understand that the unitary method is a practical application of proportions. **Introducing Proportion:** - Explain that proportion relates one part to the whole and ratio compares one part to another part or parts. - Recognize that proportions are used to compare quantities in a way that maintains a consistent relationship.	the cost of a single item when given the total cost and quantity. - Use the unitary method to calculate one quantity when the unit price and the total are known. **Scaling and the Unitary Method:** - Learn how to use the unitary method to scale quantities up or down, such as converting measurements or adjusting recipes. - Solve problems involving the unitary method in scaling scenarios. **<u>Practical Applications:</u>** **Real-World Applications of Ratio, Proportion, and the Unitary Method:**

	Real-Life Scenarios): - Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios. - Apply addition skills to find the sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit. **Calculating Change:** - Determine the change to be received after making a purchase by subtracting the total cost from the			**Solving Proportions:** - Learn methods to solve proportions, such as cross-multiplication or equivalent fractions. - Apply these techniques to solve problems involving proportions in various contexts, such as recipe scaling or map reading. **Real-World Applications of Ratio and Proportion:** - Apply the concepts of ratio and proportion to solve real-world problems related to	- Apply ratio, proportion, and the unitary method to practical situations, including price comparisons, measurement conversions, and recipe adjustments. - Recognize how these concepts are used in daily life and various professions. **Problem-Solving with Ratio, Proportion, and the Unitary Method:** - Solve complex problems that require the application of ratio, proportion, and the unitary method. - Analyse scenarios where these concepts are essential, and apply them to make informed decisions.

	amount paid. - Accurately count and provide change using a combination of coins and notes. - Practice giving and receiving change during the supermarket visit when making purchases. **Budgeting and Decision-Making:** - Learn to make informed decisions when shopping by comparing prices, evaluating quality, and considering personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget constraints. - Reflect on budgeting and decision-making			scaling, pricing, and mixing ingredients. - Understand how ratio and proportion are used in everyday life, from adjusting recipe quantities to determining distances on maps.	

	experiences during and after the supermarket visit. **Practical Application of Money Skills:** - Apply money skills acquired during the supermarket visit to real-life situations, such as shopping for groceries, personal items, or making everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.				

Cycle Three					
Autumn 1			**Autumn 2**		
Number 1			**Geometry & Measure**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Understanding Addition: - Build on the concept of addition by applying it to more complex scenarios. - Develop the ability to recognize and apply addition as a fundamental operation for combining quantities in various contexts, including numbers	**Understanding Place Value:** - Extend understanding of place value to numbers up to 1,000. - Recognize the significance of each digit's position in larger numbers, including thousands and hundreds. **Column Addition and Subtraction:** - Add and subtract two-digit numbers (10-99) using column addition	**Column Addition and Subtraction:** - Add and subtract numbers using the vertical column method. - Carry over and borrow when needed in column addition and subtraction. **Ordering Decimals and Negative Numbers** - Arrange decimals in ascending and descending order. - Understand the concept of negative numbers and place	**Using a Ruler to Measure Lines:** -Introduce learners to the concept of measurement using a ruler. Help them understand how to place a ruler alongside an object or line and count the units to find its length. Focus on measuring lines of different sizes in a hands-on and practical manner. **Identifying Straight Lines:** -Teach learners to recognize and	**Identifying 2D Shapes:** - Recognize and name common 2D shapes such as squares, rectangles, triangles, circles, and polygons. - Differentiate between these shapes based on their defining characteristics, such as the number of sides and angles. **Describing Properties of 2D Shapes:**	**Calculate the Area of Triangles:** -Students should be able to accurately calculate the area of triangles using the formula A = 0.5 x base x height, demonstrating a clear understanding of how to measure and apply the base and height of a triangle. **Decompose and Calculate Compound Shape Areas:** -Develop the ability to decompose complex shapes into simpler geometric components, such as triangles and rectangles. Students will then calculate the total area of

and word problems. **Understanding Subtraction:** - Extend the understanding of subtraction to more diverse situations where it is necessary to subtract or remove items from a given set. - Identify and solve subtraction problems involving larger numbers and real-world scenarios, such as calculating change or comparing quantities.	and subtraction without regrouping. - Apply the vertical column method for addition and subtraction to numbers involving tens and ones efficiently. -Move onto problems that involve borrowing and carrying when appropriate. **Ordering Numbers (Up to 1000):** - Extend the ability to arrange numbers in ascending and descending order to include larger numbers up to 1,000. - Demonstrate proficiency in comparing and accurately placing	them on a number line. **Multiplication Timetables** - recall multiplication tables up to 10 x - Solve multiplication problems involving 2 and a single-digit number. **Long Multiplication** - Perform long multiplication using the grid method. - Multiply multi-digit numbers step by step, aligning digits correctly. **Division Using Written Methods** - Learn various methods for performing division. - Divide two numbers using the long division method.	distinguish straight lines from other shapes and objects. Use everyday examples, such as the edges of a book or the sides of a door, to help them identify and understand the characteristics of straight lines. **Recognizing Basic Shapes:** -Introduce simple geometric shapes like circles, squares, triangles, and rectangles. Help learners identify these shapes in their surroundings and understand their basic properties, such as the number of sides and corners. **Calculating Area in Basic Shapes:**	- Describe the key properties of 2D shapes, including sides, angles, and symmetry. - Identify shapes with specific properties, like right angles or equal sides. **Classifying 2D Shapes:** - Categorize 2D shapes into broader groups, such as quadrilaterals, triangles, and circles. - Identify the subcategories within these groups, like isosceles triangles or rhombuses. **Exploring Perimeter and Area:** - Calculate the perimeter of 2D	compound shapes by summing the areas of these individual components, demonstrating proficiency in breaking down and solving more complex area problems. **Apply Area Concepts to Real-World Scenarios: -**Apply the knowledge of area calculation to real-world scenarios and practical problems involving triangles and compound shapes, such as calculating the area of irregular plots of land or designing floor plans. Students should be able to translate mathematical concepts into meaningful applications. **Understanding Pythagoras' Theorem:** -By the end of this lesson, students should have a clear and comprehensive understanding of Pythagoras'

Exploring Multiplication Concepts: - Deepen the understanding of multiplication by exploring it as a method for scaling up or repeated addition, e.g., 3 groups of 4 is equivalent to 4 + 4 + 4. - Apply multiplication to solve more complex problems involving larger numbers, arrays, and real-world situations. **Introduction to Division Concepts:** - Expand the comprehension of	numbers on an expanded number line, including values beyond 100. **Multiplication Timetables:** - Recall and apply multiplication facts confidently for times tables up to the 10 x table. - Solve multiplication problems involving two-digit numbers multiplied by single-digit numbers, demonstrating improved multiplication fluency. **Long Multiplication:** - Advance long multiplication skills to include two-digit by two-digit	**Remainders in Division** - Understand what a remainder is in division. - Solve division problems and express the remainder appropriately.	-Begin to introduce the concept of area by focusing on basic shapes like squares and rectangles. Show young learners how to count the number of squares inside these shapes to find their area in a visual and concrete way. **Practical Application of Measurement:** -Encourage practical application by having learners measure everyday objects, identify straight lines, and recognize basic shapes in their environment. Provide simple, hands-on activities that reinforce these concepts in a	shapes by adding the lengths of their sides. - calculate the area of basic shapes like rectangles and squares by counting unit squares or using formulas. **Constructing and Drawing 2D Shapes:** - Use rulers, protractors, and other tools to accurately draw 2D shapes with specific dimensions. - Understand how to construct shapes based on given criteria, like drawing a parallelogram with specific angles. **Analysing Real-World**	Theorem, recognizing it as a fundamental principle that applies to right-angled triangles. They should be able to state the theorem and its significance in geometry. **Applying Pythagoras' Theorem:** -Develop the ability to apply Pythagoras' Theorem to calculate the length of an unknown side (either the hypotenuse or another side) in a right-angled triangle. Students should be able to identify when the theorem is applicable and solve related problems accurately. **Using Pythagoras' Theorem in Real-World Scenarios:** -Apply Pythagoras' Theorem to solve real-world problems and practical situations, such as determining the distance between two points on a map, calculating the dimensions of a right-angled object, or assessing

division by delving into the concepts of sharing and grouping objects into equal parts for more extensive sets. - Solve division problems involving larger dividends, divisors, and quotients, and explore remainders and fractions. **Recognizing Mathematical Symbols:** - Continue to learn and recognize mathematical symbols such as addition (+), subtraction (-), multiplication (×), and division (÷).	multiplication using the grid method. - Apply the grid method for multiplication efficiently to solve more complex problems involving larger numbers. **Division Using Written Methods:** - Build on knowledge of division methods by learning and practising the short division method. - Develop proficiency in solving division problems involving larger dividends and divisors, including remainders, using written methods such as short division.		real-world context.	**Applications of 2D Shapes:** - Apply knowledge of 2D shapes to solve real-world problems, such as calculating the area of a room or determining the shape of a garden. - Recognize and describe the presence of 2D shapes in everyday objects and architecture. **Identifying Types of Angles:** -Students should be able to distinguish and correctly identify different types of angles, including acute, obtuse, right, and straight angles, both in written descriptions and geometric figures.	the safety of structures involving right angles. Students should demonstrate the ability to translate mathematical concepts into real-world applications.

- Gain a deeper understanding of how these symbols represent mathematical operations and apply them to more intricate mathematical expressions. **Applying Basic Maths Facts:** - Build upon the recall of basic addition and subtraction facts for numbers 0-5 to include facts for numbers up to 10 or higher. - Apply these facts confidently and efficiently to solve a wide range of mathematical problems, laying				**Measuring Angles:** **-**Develop proficiency in using a protractor to accurately measure angles in degrees. **Constructing Angles: -**Learn to use a ruler and protractor to draw angles with specified measurements. Students should be able to construct angles of various sizes and types, including acute, obtuse, and right angles, following given instructions or angles from a diagram. **Applying Angle Concepts:** -Apply knowledge of angle types, angle	

the foundation for more advanced mathematical operations.				measurement, and angle construction to solve geometric problems and real-world scenarios. Students should be able to calculate missing angles in triangles, quadrilaterals, and other polygons, as well as use angles to solve problems involving direction and orientation.	
Spring 1			**Spring 2**		
Number 2			**Algebra**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing

Collecting Data from Simple Observations: - Develop the ability to collect basic data by counting and observing everyday objects or occurrences. - Practice recording the data in a simple, organised manner, such as tally marks or simple drawings. **Creating Basic Pictograms:** - Learn to represent collected data using simple pictograms, where each picture or	**Identifying Multiples and Factors:** - Identify multiples and factors of a given number. - Find all factor pairs of a number, demonstrating a clear understanding of factors and multiples. **Problem Solving with Multiplication and Division:** - Solve problems that involve multiplication and division. - Apply knowledge of factors and multiples, as well as squares and cubes, to solve various	**Exploring Square Numbers, Square Roots, and Powers:** - Learn the concept of square numbers (e.g., 4, 9, 16) and square roots (e.g., √9 = 3). - Understand the concept of powers and how they relate to exponentiation (e.g., 2^3 = 8). **Factors and Highest Common Factors (H.C.F):** - Understand factors as numbers that divide evenly into another number. - Calculate the highest common factor (H.C.F) of two or more numbers. **Advanced Currency Recognition and Handling:**	**Solving Simple Equations with Concrete Examples:** - Explore basic equations with a single unknown, using everyday objects like apples or toys to represent numbers. - Begin to solve these equations by finding the value of the unknown through physical manipulation, such as counting objects. **Using Shapes and Pictures for Algebraic Ideas:** - Understand that algebraic concepts can be connected to shapes and pictures.	**Understanding unknowns/Unknowns** - Define and identify what an unknown is in mathematical expressions. - Recognize and use simple unknowns (e.g., x, y) to represent unknown quantities. **Solving One-Step Equations** - Learn to solve one-step equations involving addition or subtraction. - Practise using inverse operations to isolate the unknown in equations like 3 + x = 7. **Solving Simple Equations with Multiplication and Division**	**Understanding unknowns and Constants** - Define and distinguish between unknowns (representing unknowns) and constants (fixed values) in algebraic expressions and equations. - Identify unknowns and constants in given algebraic expressions. **Solving One-Step Equations** - Solve one-step equations involving addition or subtraction with integers and fractions. - Use inverse operations to isolate the unknown, such as solving equations like 3x + 5 = 11. **Solving One-Step Equations with Multiplication and Division** - Extend equation-solving skills to

symbol represents one unit of data. - Explore using easily recognizable symbols, like smiley faces or stars, to create the pictograms. **Interpreting Pictograms for Number Patterns:** - Understand that pictograms represent data visually and that patterns can emerge from the arrangement of symbols. - Begin to identify and discuss simple number patterns, such as which symbol appears	mathematical problems. **Vocabulary of Prime Numbers and Composite Numbers:** - Define and use the vocabulary related to prime numbers, prime factors, and composite numbers. - Distinguish between prime and composite numbers, understanding their properties. **Reinforcing Vocabulary and Prime Number Recognition:** - Continue to use and understand the vocabulary of prime numbers, prime factors, and	- Demonstrate a comprehensive understanding of various coins and notes, including their denominations and distinguishing features. - Apply this knowledge during a visit to a local supermarket, where you will identify and handle different currency denominations for real-life transactions. **Money Management and Practical Budgeting:** - Develop practical money management skills by creating and managing a realistic shopping list based on specific needs, preferences, and budget constraints. - Calculate the estimated total cost	- Practise using drawings or shapes to illustrate basic equations, making the idea of unknowns more tangible. **Discovering Balance in Equations:** - Explore the idea of balance by understanding that equations represent a balance between two sides. - Engage with simple equations like "2 + 3 = 5" and "4 - 2 = 2" to grasp the concept of keeping both sides equal.	- Extend equation-solving skills to include multiplication and division. - Solve equations like 2x = 10 or 15 ÷ y = 3 by applying inverse operations. **Using Expressions to Represent Real-World Scenarios** - Translate real-world situations into simple algebraic expressions. - Understand how to represent situations like "5 more than a number" as algebraic expressions (x + 5). **Evaluating Expressions** - Learn to substitute values	include multiplication and division. - Solve equations like 2y/4 = 6 or 8z - 7 = 17 by applying inverse operations. **Translating Word Problems into Equations** - Translate word problems and real-world scenarios into algebraic equations. - Understand how to represent situations like "twice a number increased by 4 is 18" as algebraic equations. **Solving Two-Step Equations** - Learn to solve two-step equations that involve both addition/subtraction and multiplication/division. - Apply a step-by-step approach to solve equations like 2x + 3 = 11 or 5y/2 - 1 = 9.

most frequently or least frequently in the pictogram. **Extending Pictogram Understanding:** - Progress to more complex pictograms, involving larger sets of data and a variety of symbols. - Begin to recognize more intricate number patterns within these extended pictograms and discuss them with guidance.	composite numbers. - Determine whether a number up to 100 is prime or composite and recall prime numbers up to 19. **Multiplying with Formal Written Methods:** - Multiply numbers with up to 4 digits by a one or two-digit number. - Utilise formal written methods, including long multiplication, particularly when multiplying by two-digit numbers. **Advanced Multiplication with Formal Methods:** - Further practice multiplying	of items on the shopping list, considering quantities, prices, and potential discounts to stay within budget. **Transaction Calculations and Efficient Payment Handling:** - Apply mathematical calculations to determine the total cost of items selected during the supermarket visit, considering any discounts or special offers. - Practise efficient payment handling by calculating change accurately and confirming receipts during real-life transactions at the supermarket.		for unknowns and evaluate algebraic expressions. - calculate the value of expressions like 2x - 3 when x is given. **Identifying Patterns and Relationships** - Recognize patterns and relationships between numbers and unknowns. - Explore how changing the value of a unknown affects the outcome in algebraic expressions and equations **Identify Number Patterns:** - Recognize and describe linear number patterns in sequences, highlighting the	**Applying Algebraic Skills to Practical Situations** - Apply algebraic problem-solving skills to practical scenarios, including calculating dimensions, rates, and prices. - Solve problems that require setting up and solving two-step equations to find unknown quantities. **Solve Problems Involving Sequences:** -Apply understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions. **Determine Term-to-Term Rules:** Learn to identify and establish the

	numbers up to 4 digits by one or two-digit numbers. - Extend proficiency in using formal written methods, particularly focusing on long multiplication for two-digit numbers. **Mental Multiplication and Division:** - Develop mental maths skills to multiply and divide numbers. - Draw upon known facts and multiplication tables to perform mental calculations efficiently. **Recognizing Coins and Notes:** - Identify and distinguish various	**Financial Decision-Making:** - Engage in informed financial decision-making by evaluating product options, comparing prices, and making choices based on quality, value, and personal preferences during the supermarket visit. - Reflect on and analyse the financial decisions made during the visit, considering how easy or difficult it was to remain within budget. **Advanced Currency Recognition and Handling:** - Demonstrate a comprehensive understanding of various coins and notes, including their denominations and		constant difference between consecutive terms. **Extend Sequences:** -Confidently use the terminology of position and term when describing linear sequences. -Extend existing number sequences both forwards and backwards by applying the identified pattern to predict and generate subsequent terms accurately. **Generalize and Express Pattern:** -Develop the ability to generalise linear number patterns and express rules in words based on multiplying followed by either addition	term-to-term rule for linear sequences, understanding how each term relates to the previous term through addition or subtraction. **Apply Position-to-Term Rules (nth term):** Develop the ability to apply position-to-term rules to determine the value of a term at a specific position within a linear sequence without having to generate all previous terms.(nth term) **Understanding Linear Graphs, Gradient, and Y-Intercept:** -Students should be able to draw and interpret linear graphs using the equation y = mx + c, where "m" represents the gradient (slope) and "c"

	coins and notes, including their denominations and unique features. - Recognize the monetary value associated with each coin and note. - Apply this knowledge during a visit to a local supermarket, identifying the currency used in transactions. **Making Amounts with Coins and Notes:** - Construct specific monetary amounts using a combination of coins and notes, considering different denominations. - Demonstrate the ability to form amounts	distinguishing features. - Apply this knowledge during a visit to a local supermarket, where you will identify and handle different currency denominations for real-life transactions. **Money Management and Practical Budgeting:** - Develop practical money management skills by creating and managing a realistic shopping list based on specific needs, preferences, and budget constraints. - Calculate the estimated total cost of items on the shopping list, considering quantities, prices, and potential discounts to stay		or subtractions. (term to term rule) **Solve Problems Involving Sequences: -**Apply understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions. .	represents the y-intercept. They should be able to create linear graphs to represent numerical patterns and sequences encountered previously, and understand the relationship between the graph's slope (gradient) and the rate of change in the sequence. Furthermore, students should be able to interpret linear graphs, identify and explain the significance of the gradient and y-intercept, and use graphs to make predictions and draw conclusions about the behaviour of numerical patterns and sequences in graphical form.

	accurately and efficiently. - Practise making purchases and paying for items at the local supermarket using the appropriate currency. **Money as a re-cap on Decimals:** - Understand the connection between money and decimals by recognizing that cents represent parts of a whole dollar. - Begin to use decimal notation when dealing with monetary amounts, such as understanding that £1.50 can be represented as 1.50 pounds.	within budget. **Transaction Calculations and Efficient Payment Handling:** - Apply mathematical calculations to determine the total cost of items selected during the supermarket visit, considering any discounts or special offers. - Practise efficient payment handling by calculating change accurately and confirming receipts during real-life transactions at the supermarket. **Financial Decision-Making:** - Engage in informed financial decision-making by evaluating product			

	Calculating Totals with Money (Including Real-Life Scenarios): - Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios. - Apply addition skills to find the sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit. **Calculating Change:** - Determine the change to be received after	options, comparing prices, and making choices based on quality, value, and personal preferences during the supermarket visit. - Reflect on and analyse the financial decisions made during the visit, considering how easy or difficult it was to remain within budget.			

	making a purchase by subtracting the total cost from the amount paid. - Accurately count and provide change using a combination of coins and notes. - Practice giving and receiving change during the supermarket visit when making purchases. **Budgeting and Decision-Making:** - Learn to make informed decisions when shopping by comparing prices, evaluating quality, and considering personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget constraints.				

	- Reflect on budgeting and decision-making experiences during and after the supermarket visit. **Practical Application of Money Skills:** - Apply money skills acquired during the supermarket visit to real-life situations, such as shopping for groceries, personal items, or making everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.				

Summer 1			**Summer 2**		
Ratio & Proportion			**Statistics & Probability**		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Sharing Equally: -Support learners to be able to understand and demonstrate the concept of sharing objects or items equally among a group. Aim to divide a collection of objects into equal parts and ensure that each part has the same number of items. **Recognizing Proportion:**	**Understanding Ratios:** - Define what a ratio is and recognize that it represents a comparison of two or more quantities. - Express ratios in the form of "a to b" or "a:b" and understand their significance in real-world contexts. **Simplifying Ratios:**	**<u>Ratio and Proportion:</u>** **Understanding Ratio:** - Define what a ratio is and distinguish it as a way to compare two or more quantities. - Represent ratios in the form of "a to b" or "a:b" and identify their components. **Understanding Proportion:**	**Understanding Likelihood:** -Help young learners understand the concept of likelihood by using everyday examples. Teach them to differentiate between things that are likely to happen, like the sun rising every day, and things that are unlikely, like finding a rainbow in their bedroom.	**Understanding Probability Scales:** - Develop a clear understanding of probability scales, including the concept that probabilities range from 0 (impossible event) to 1 (certain event), and how to interpret probabilities within this scale. **Distinguishing Impossible and Certain Events:**	**Conditional Probability:** -Gain proficiency in calculating conditional probabilities, understanding how the probability of one event changes when another related event has already occurred. **Real-World Application of Probability:** -Apply the knowledge of probability to solve real-world problems and make informed decisions,

-Help students recognize the idea of proportion by using concrete objects and visual aids. They will hopefully be able to compare the sizes of different groups of objects and identify when one group has more or less than the other. **Mixing Simple Recipes:** -Introduce the concept of mixing and proportion through simple recipes, such as making fruit squash, fruit salad or a sandwich.	- Learn how to simplify ratios to their simplest form by dividing both parts by their greatest common factor. - Apply this simplification process to ratios to make them easier to work with and understand. **Using Ratios to Compare Quantities:** - Apply ratios to compare different quantities or parts within a whole, such as comparing the number of boys to girls in a class. - Solve problems that involve	- Define proportion as a special type of equation that states that two ratios are equal. - Recognize that proportions are used to maintain consistent relationships between quantities. **<u>Comparison Between Ratio and Proportion:</u>** **Identifying Differences:** - Identify the key differences between ratios and proportions, emphasising that a proportion is an equation involving two ratios.	**Exploring Simple Events:** -Introduce the idea of simple events by presenting basic scenarios with two outcomes, such as flipping a coin to get either heads or tails. Help them grasp the idea that there are only a few possible outcomes in some situations. **Recognizing More and Less Likely:** -Teach very basic comparisons of likelihood, such as recognizing that having sunny weather is more likely during summer than having snow. Use simple visuals or	-Learn to distinguish between events that are impossible (with a probability of 0) and events that are certain (with a probability of 1) in various real-world and mathematical scenarios. **Expressing Probability as a Fraction:** - Mastering the skill of expressing probabilities as fractions, recognizing that a probability of 0 means the event cannot occur, and a probability of 1 signifies that the event is guaranteed to occur.	such as assessing risks, understanding odds in games, and interpreting statistics in various contexts. **Discovering Mode:** -Begin to understand mode as the number that appears the most in a set of numbers. Learn to identify it in simple datasets and recognize that sometimes there may be more than one mode. **Exploring Range:** -Explore the idea of range as the difference between the biggest and smallest numbers in a set. Practice finding the range in smaller datasets to see how data can vary.

- Learners will be given the opportunity to follow basic instructions to combine different ingredients in the right proportions to create a simple dish or drink. **Using Visual Models: -**Teach students to use visual models, such as drawings or pictures, to represent the sharing or mixing of objects or ingredients. They should be able to draw or identify simple visual representations that illustrate	finding one quantity when the ratio and another quantity are given. **Introduction to the Unitary Method:** - Define the unitary method as a problem-solving approach that involves finding the value of one unit and then extending it to find the total. - Understand that the unitary method is a practical application of proportions. **Introducing Proportion:**	- Explain why proportions are used when comparing ratios in specific contexts. **<u>Exploring the Unitary Method:</u>** **Using the Unitary Method to Solve Simple Problems:** - Apply the unitary method to solve basic problems, such as finding the cost of a single item when given the total cost and quantity. - Use the unitary method to calculate one quantity when the unit price and the total are known. **Scaling and the Unitary Method:**	hands-on activities to illustrate these concepts. **Basic Probability Language:** -Familiarise learners with simple probability words like "likely," "unlikely," "certain," and "impossible." Encourage them to use these words to describe the chances of events happening in their daily lives.	**Calculating Simple Probabilities:** -Develop the ability to calculate the probability of simple events by counting favourable outcomes and total possible outcomes, and express these probabilities as fractions or decimals. **Understanding the Probability of Complementary Events:** -Learn how to find the probability of complementary events (the event not occurring), such as the probability of getting tails when flipping a coin	**Finding the Median:** -Learn to find the median by putting numbers in order and identifying the one in the middle. Recognize that the median helps us find the middle value in a set of numbers. **Understanding the Mean:** -Introduce the concept of the mean as the average of a set of numbers. Begin to calculate the mean of small datasets by adding the numbers together and dividing by the count. **Estimating Mean from Grouped Data:** -Explore how to make an estimate of the mean from grouped data, using simple frequency tables with easy-to-understand categories. Learn the

equal sharing and proportion. **Practical Application:** **-**Encourage practical application by having students engage in hands-on activities that involve sharing, proportion, and mixing. For example, they should be able to share a set of toys equally with their peers, compare the sizes of their portions, and help prepare a simple recipe with guidance.	- Explain that proportion relates one part to the whole and ratio compares one part to another part or parts. - Recognize that proportions are used to compare quantities in a way that maintains a consistent relationship. **Solving Proportions:** - Learn methods to solve proportions, such as cross-multiplicatio n or equivalent fractions. - Apply these techniques to solve problems involving	- Learn how to use the unitary method to scale quantities up or down, such as converting measurements or adjusting recipes. - Solve problems involving the unitary method in scaling scenarios. **<u>Practical Applications:</u>** **Real-World Applications of Ratio, Proportion, and the Unitary Method:** - Apply ratio, proportion, and the unitary method to practical situations, including price comparisons, measurement		versus the probability of getting heads. **Calculating Compound Probabilities:** -Explore the concept of compound probabilities, including the probability of two or more events occurring together (joint probability) and the probability of either event happening (mutually exclusive events). **Understanding Mode: -**Define and recognize the mode as the most	basics of finding a central value from grouped information. **Comparing Averages:** -Start comparing mode, range, median, mean, and estimated mean from grouped data in basic datasets. Begin to recognize which measure works best for different types of data.

	proportions in various contexts, such as recipe scaling or map reading. **Real-World Applications of Ratio and Proportion:** - Apply the concepts of ratio and proportion to solve real-world problems related to scaling, pricing, and mixing ingredients. - Understand how ratio and proportion are used in everyday life, from adjusting recipe quantities to determining distances on maps.	conversions, and recipe adjustments. - Recognize how these concepts are used in daily life and various professions. **Problem-Solving with Ratio, Proportion, and the Unitary Method:** - Solve complex problems that require the application of ratio, proportion, and the unitary method. - Analyse scenarios where these concepts are essential, and apply them to make informed decisions.		frequently occurring value within a dataset or list of numbers. Learn to identify situations where mode is a useful measure of central tendency. **Calculating Range: -**Understand the concept of range as the difference between the highest and lowest values in a dataset. Develop the ability to calculate the range and interpret its significance in describing data variability. **Determining Median: -**Learn to find the median of	

				a dataset by arranging the values in ascending order and identifying the middle value. Explore how the median represents the central value and is less influenced by outliers. **Calculating Mean:** **-**Define the mean (average) as the sum of all values in a dataset divided by the total number of values. Develop the skill to calculate the mean and recognize its utility in summarising data.	

				Comparing Averages: -Explore situations where mode, range, median, and mean may give different results and understand the strengths and limitations of each measure in different contexts. **Application of Averages:** -Apply the concepts of mode, range, median, and mean to analyse and interpret real-world data, such as exam scores, income distributions, and sports statistics, to draw meaningful conclusions and	

				make informed decisions.	